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STATE OF ALASKA

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ANNUAL REPORT OF PROGRESS, 1961-1962

FEDERAL AID IN FISH RESTORATION PROJECT F-5-R-3

SPORT FISH INVESTIGATIONS OF ALASKA

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INTRODUCTION

This report of progress consists of the job completion reports from the State of Alaska Federal Aid in Fish Restoration Project F-5-R-3, "Sport Fish Investigations of Alaska."

The current project is composed of twenty separate studies and was designed to evaluate the various aspects of the State's recreational fishery resources. The information gathered will provide the necessary background data for better management practices and for the development of future studies. During the current segment, continued emphasis was placed on the overall inventory and cataloging of accessible waters, evaluation of catch data, and investigations on various species of fish.

As a result of several problems of immediate concern, several new studies were instigated during the report year. Data accumulated from these studies has helped solve some problems in projects already in progress.

The population of Alaska is increasing rapidly and this is being reflected in the ever increasing number of "No Trespassing" signs put up by individuals in the vicinity of population centers. Fortunately, much of Alaska's fishery waters are still in the public domain. The division's program of acquiring access to fishing waters continued at a much faster pace since being instigated in 1959. Emphasis is being placed on this job and the successful continuation of this activity will forstall many serious recreational use problems currently facing other states.

The enclosed progress reports are fragmentary in many respects and the interpretations contained therein are subject to re-evaluation as the work progresses.

JOB COMPLETION REPORT

RESEARCH PROJECT SEGMENT

State: ALASKA

Project No: F-5-R-3 Name: Sport Fish Investigations of Alaska

Job No: 5-A Title: Inventory and Cataloging of the Sport Fish and Sport Fish Waters of Southwestern Alaska

Period Covered: July 1, 1961 to April 15, 1962

Abstract:

Literature of the Alaska Department of Fish & Game and of the U.S. Fish and Wildlife Service was used for background information to initiate the Inventory and Cataloging of the sport fishing waters of Southwestern Alaska.

Twenty-three lakes were surveyed either partially or completely and ten more were cataloged from investigations made in years past.

Recommendations:

More information must be provided on waters presently undergoing intensive fishing pressures.

The search for economical sources of salmonoid eggs should continue through the next project segment.

Some non-producing lakes in areas of heavy fishing pressure should be rehabilitated and stocked with desirable sport species to provide information on the value of this management technique.

As fishing pressure increases there will be an additional need for hatchery fish to augment the natural stocks of sport fish. Waters now barren must be brought into production to relieve pressure on the most heavily fished lakes and streams.

Objectives:

To evaluate the extent, the potential and the current use of the waters readily available to the areas' anglers.

To determine the relative need for further management investigations and to direct the course of such studies.

Techniques Used:

The Southwestern area of Alaska includes the lands and waters of the Alaska Peninsula south from Becherof and extending south and west along the Aleutian Chain to Attu Island. Also included are the lands and waters of the Kodiak-Afognak group of islands from Point Banks on Shuyak Island to South Cape on Chirikof Island. The area is approximately 1,500 miles long by 175 miles wide.

The terrain varies from high, rugged mountains with numerous glaciers to low, wet tundra. The average precipitation, 40" to 80" (approximate) keeps the areas' innumerable lakes and streams full the year around.

Most of this part of Alaska is sparsely populated and roads are almost non-existant. A military road system covers the northern portion of Kodiak Island opening an area of about four hundred square miles to anglers.

Boats and aircraft must be utilized for transportation elsewhere to gain access to fishing.

A study of the fisheries literature covering this area was started immediately after the project was activated on July 1, 1961. Material was available from work done by the Territorial Department of Fish and Game, the Alaska Department of Fish and Game, and from work done by the U.S. Fish & Wildlife Service. Information of considerable value has been gleaned from residents of the area who have all been most helpful and cooperative.

Since the field season was well advanced at the start of the project, it was evident that information on fishing pressure and catch was needed to designate the waters most in need of investigation for management purposes. Most of the 400 square miles accessible to the Kodiak road system are within the

boundaries of the Kodiak Naval Reservation and are utilized more heavily by Naval personnel than by the area's civilian residents. More fishing pressure is exerted in this relatively restricted area than on all the rest of Southwestern Alaska's sport fishing waters. A creel census form was distributed to the various commands on the Naval Station who, in turn, distributed them to all personnel. Almost 100% of the forms were returned and the information is tabulated in Table 1.

Standard lake and stream survey methods were used to collect the data for cataloging purposes. Many of the lakes on Kodiak and Afognak Islands have water that is marginal for the maintenance of populations of rainbow and other species of trout and salmon. It was necessary to gather as much information as possible on the critical levels of O_2, pH, total hardness, etc., since these would be major factors in determining future management.

Population sampling was accomplished with the use of varying mesh gill nets designed to sink. These were set from shore and left to fish for either 24 or 48 hours, pulled, and the contents recorded. Netting, creel census data and visual observation gave a rough estimate of populations, size ranges and condition factors.

Some information is available on lake surface areas and volumes but little has been done on temperature fluctuations, water exchange, or bottom conformation. A lack of equipment precluded much effort in this line during the 1961 season. An unusually severe winter, which made the roads almost impassible much of the time, prevented the accomplishment of much off-season field work.

Findings:

The area accessible to the Kodiak road system has been divided into arbitrary units and the lakes therein have been assigned numbers.

TABLE 1

CREEL CENSUS DATA

Name of River Fished:	Of Fishermen Canvassed, % Fished Subj. River:	% Species Caught: RB	DV	SS	RS	PS	Average Size Range RB	DV	SS	RS	PS	% OF Success:
BUSKIN RIVER	54.9%	9.7	61.9	7.4	11.3	9.5	10"	11"	18"+	18"+	16"+	N.A.
AMERICAN RIVER	17.1%	8.3	64.8	6.5	---	20.4	11"	13"	18"+	---	15"	N.A.
KALSIN RIVER	7.6%	---	46.4	17.9	---	36.8	---	12"	12"+	---	12"+	N.A.
RUSSIAN CREEK	8.2%	17.2	67.2	4.7	---	10.9	11"	11"	18"+	---	14"+	N.A.
SALTERY CREEK	4.2%	61.0	22.2	---	16.7	---	13"	13"	---	16"+	---	N.A.
PASAGSHAK RIVER	4.2%	---	52.4	14.3	33.3	---	---	13"	18"+	16"+	---	N.A.
SARGENT CREEK	2.1%	28.6	66.7	---	---	4.8	9"	13"	---	---	16"+	N.A.
SALONIE CREEK	1.7%	30.8	38.5	---	---	30.8	13"	13"	---	---	16"+	N.A.

Lakes Fished	% Fished Subj. Lakes	% Species Caught RB	DV	Average Size Range: RB	DV	% of Success
BELLS' FLATS LAKES	47%	84.0%	16%	8" - 12"	8" - 12"	44.6%
SALTERY COVE LAKE	13%	25.0%	75%	6" - 12"	12" - 16"	76.9%
CLIFF POINT LAKES	12%	75.0%	25%	8" - 12"	10" - 12"	83.3%
CAPE CHINIAK LAKES	12%	75.0%	25%	8" - 14"	10" - 12"	75.0%
ANTON LARSEN BAY LAKES	7%	66 2/3%	33 1/3%	8" - 14"	10" - 12"	28.6%
SPRUCE CAPE LAKES	4%	100%	---	6" - 12"	---	67%
WOODY & LONG IS. LAKES	4%	100%	---	6" - 18"	---	75.0%
AFOGNAK LAKE	1%	---	100%	---	8" - 18"	100%

Examples follow:

Area	Unit	Lake No.	Lake Name
Kodiak Island	Naval Base (B)	B-19	Lake Louise
" "	Anton Larsen Bay (AL)	AL-3	no name
" "	Spruce Cape (SC)	SC-14	Dark Lake

Since many of the lakes in Southwest Alaska have no names, this system has been a great aid both in cataloging and locating them in a permanent record. The following lakes have been either completely or partially catalogued and are listed using the system noted above.

	Area	Unit	Lake No.	Lake Name
1.	Kodiak Island	Spruce Cape (SC)	SC-14	Dark Lake
2.	" "	" "	SC-13	Island Lake
3.	" "	" "	SC-12	Lake Gertrude
4.	" "	Anton Larsen Bay (AL)	AL-3	unnamed
5.	" "	Naval Base (B)	B-80	Lake Orbin
6.	" "	" "	B-19	Lake Louise
7.	" "	" "	B-18	Lake Genevieve
8.	" "	" "	B-35	Lake Margaret
9.	" "	" "	B-27	unnamed
10.	" "	" "	B-26	Lake Aurel
11.	" "	" "	B-25	Lake Caroline
12.	" "	" "	B-24	Lake Cicely
13.	" "	" "	B-23	Lake Phil
14.	" "	" "	B-21	Lake Lee
15.	" "	" "	B-20	Jack Lake
16.	" "	Narrow Cape (NC)	NC-55	unnamed
17.	" "	" "	NC-54	unnamed
18.	" "	" "	NC-53	Twin Lakes
19.	" "	Broad Point (BP)	BP-40	unnamed
20.	" "	Cape Chiniak (CC)	CC-41	Chiniak Lagoon
21.	" "	" "	CC-42	unnamed
22.	" "	Cliff Point (CP)	CP-27	unnamed
23.	" "	" "	CP-29	unnamed
24.	Adak Island	Naval Base (A)	A-1	Andrew Lake
25.	" "	" "	A-2	Haven Ponds
26.	" "	" "	A-3	Lake Leonne

	Area	Unit	Lake No.	Lake Name
27.	Adak Island	Naval Base (A)	A-4	Mitt Lakes
28.	" "	" "	A-5	Heart Lake
29.	" "	" "	A-6	Lake DeMarie
30.	" "	" "	A-7	Boy Scout Pond
31.	" "	" "	A-8	No-Luck Pond
32.	" "	" "	A-9	Bells Lake
33.	Kagalaska Is.	Kagalaska (k)	K-10	Kagalaska Lake

The lakes on Adak Island and Kagalaska Island were investigated thoroughly by the Alaska Department of Fish & Game in 1958. The results of these investigations are contained in a report available to those interested at the offices of the Department in the Subport Building, Juneau, Alaska.

Eleven lakes were chosen from among the first twenty-three listed to be given the most intensive investigation.

These were:

Lake Gertrude SC-12: Lies near the tip of Miller Point (Spruce Cape unit.) a few feet above sea level and has a surface area of 19.7 acres. Because of its proximity to the City of Kodiak, its accessibility, and potential for maintaining a good sport fishery, continuing management methods will be employed to bring the lake up to an expected population level.

In 1958, 8,000 steelhead fry were introduced and subsequently produced a fair sport catch. In 1961, a plant of 4,500 Kamloops rainbow fry and 5,000 sockeye fry were introduced. It is too soon to assess the results of this plant.

It is recommended that stocking be continued in Lake Gertrude.

Unnamed AL-3: Lies near the end of the Anton Larsen Bay road at an elevation of approximately 50 feet above sea level. It is a beaver dammed lake of 1 1/2 acres (est.) and varies in depth from three foot shallows to 6 feet in the deepest part.

Dissolved oxygen was 7 ppm. and the water was slightly acid (pH 6.6). The water is brown in color and visibility is about 5 feet (Sechi disk reading.)

Test nets yielded three adult rainbows all of the same age class. These were fish remaining from the 1958 plant. There is no evidence of reproduction or of any bottom suitable for spawning. Water is supplied to the lake from runoff from the surrounding hills. Since the lake can easily be weired, it is recommended that a pilot plant of 500 grayling be introduced experimentally during the 1962 season.

Lake Louise B-19: Lies on the Naval Station adjacent to the main road into Kodiak. It is a fairly large lake of some 20 acres (est.) at the end of a small lake system. It drains directly into the Buskin River through a long man-made channel.

A run of anadromous Dolly Varden trout and a few sockeye salmon use the lake. There is little fishing pressure in spite of proximity to the road because of the lack of desirable sport species.

It is recommended that this lake be rehabilitated and re-stocked with silver salmon during the 1962 season.

Lake Genevieve B-18: Lies adjacent to the main Naval Base road opposite Lake Louise. It is a larger, deeper lake than Louise (25 acres est.) and contains about three acres of spawning gravel. It is supplied by the runoff from a small watershed, some of which is muskeg.

Sparse growths of water plants are to be found at some points along the shore and food organisms are numerous. Forty eight hours of net fishing yielded only two Dolly Varden and no rainbow. Numerous stickleback were seen at all points around the periphery of the lake.

It is recommended that the lake be rehabilitated and stocked with rainbow fry during the 1962 season.

Lake Margaret B-35: Lies adjacent to the main Naval Base road and empties into the Lake Louise. It is supplied by springs on the lake bottom at the shallow end and by runoff from a small watershed.

A Boy Scout camp is located along the shore and the lake is utilized for swimming and boating.

It is recommended that this lake be rehabilitated contiguously with Lakes Genevieve and Louise and be stocked with rainbow fry during the 1962 season.

Lake Aurel B-26: (Base Unit) A 7 1/2 acre (est.) lake lying at an elevation of 300 feet in the Bell's Flats area. It is the largest of three lakes in the same system. In 1961, it was stocked with 1,000 rainbow fry to augment the natural population which has been fished down to a relatively low level. The other two lakes of the system drain into Lake Aurel and some interchange of fish seems likely. The fishing has remained fair and some natural reproduction has taken place as evidenced by the several year classes visible.

It is recommended that a regular yearly stocking program with rainbow fry be instituted on this lake.

Lake Caroline B-25: A 6.37 acre lake lying in the Bell's Flats area at an elevation of 325 feet and draining into Lake Aurel. This lake has an odd bottom configuration, having a shallow, sandy shelf extending out from the shore as far as forty feet and then dropping steeply to about 20 feet to form a long trough in the center of the lake. It was stocked in 1958 with 2,000 steelhead fry and has produced fair fishing and some natural reproduction. It was stocked in 1961 with 1,000 Kamloops rainbow fry.

It is recommended that a yearly stocking of rainbow fry be instituted on this lake.

Lake Cicely B-24: A five acre lake lying at 400 feet elevation in the Bell's Flats area and draining into Lake Aurel. Planted in 1958 with 6,000 steelhead fry and again in 1961 with 1,000 Kamloops rainbow fry, this lake has produced good sport fishing and shows evidence of good natural production.

It is recommended that a yearly rainbow fry stocking program be instituted on this fine little lake.

Lake Lee B-21: A 14.256 acre lake lying at an elevation of 300 feet in the Bell's Flats area but draining a dirrerent watershed than the three lakes mentioned above.

Planted in 1958 with 6,000 steelhead fry and again in 1961 with 1,000 Kamloops rainbow fry, the lake has produced good sport fishing and gives evidence of good natural reproduction. If fishing pressure was a little lighter, the lake would give a sustained, maximum yield. But, because the fishing pressure is relatively high, it is recommended that the natural reproduction be augmented by regular yearly plants of rainbow fry.

Jack Lake B-20: A 4.73 acre lake lying at an elevation of 275 feet in the Bell's Flats area supplied by drainage from Lake Lee which lies just above it. This is a small, shallow lake incapable of sustaining much of a sport fishery.

It was planted in 1958 with 2,000 steelhead fry and again in 1961 with 500 Kamloops rainbow fry. It has not produced fishing nor does it show any evidence of natural reproduction.

It is recommended that this lake be disregarded for management purposes.

Unnamed CC-42: A shallow five acre lake lying at sea level in the Cape Chiniak Unit near Pony Point. Test netting for a period of forty eight hours produced one adult rainbow, the remains of a plant made some years back. Because this lake can be watched closely and its water is marginal for maintenance of rainbow trout, it is recommended that a pilot plant of 1,000 grayling be made during the 1962 season.

Historically, the Karluk River has been used as a source of steelhead-rainbow eggs to rear for the stocking of Kodiak lakes and streams. However, this source has cost more than eggs and fry from other sources. For these reasons, a search is being conducted for suitable stock in a more logistically suitable location. When such a stock is located, a pilot egg take will be attempted.

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